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## PATENT SPECIFICATION



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### COMPLETE SPECIFICATION.

#### Improved Wheels for Vehicles Intended to Move Over Soft Ground.

I, GIUSEPPE GARANZINI, an Italian subject of Novara, Italy, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention has for its object wheels adapted for use with motor vehicles, traction engines or tractors, characterised by the arrangement of their rims, which instead of being a continuous band as in ordinary wheels, consist only of a given number of segments regularly spaced from one another, the said wheels with their incomplete rims being coupled in pairs in such a manner that the full segments of the one correspond with the spaces or gaps of the other, or they may be arranged in any other manner so that the equivalent effect is obtained when the wheels are mounted on a vehicle.

The arrangement is based on the following principle:—A wheel when turning can obtain a grip sufficient to effect traction even though the segments comprising its rim are not arranged in the same plane.

The accompanying drawing illustrates by way of example one method of carrying out the invention and two methods of applying the wheel to vehicles.

Ordinary wheels, see for example Figs. 1 and 2, present the defect that when travelling over soft (muddy or sandy) ground they cut a furrow into which they sink to such an extent that the effort necessary to rise over the mound of soil formed in front of the rim becomes too great for the grip between the ground and the wheel, so that the furrow is cut deeper and deeper until it is impossible for the wheel to get free from it.

Suppose the rim A of the wheel R to be composed of the six segments 1—2—3—

4—5—6, connected together and fixed to the spokes radiating from the hub B mounted on an axle C. According to this invention there can be substituted for the wheel A, a pair of wheels R<sup>1</sup>—R<sup>11</sup> (Fig. 5) having hubs B<sup>1</sup>—B<sup>11</sup> each with 6 spokes, the one (Fig. 3) carrying the three rim segments 1—3—5<sup>1</sup>, while the other (Fig. 4) carries the three rim segments 2<sup>1</sup>—4<sup>1</sup>—6<sup>1</sup>, the segments of the one being so arranged as to correspond with the spaces or gaps between the segments of the other when the two hubs B<sup>1</sup>—B<sup>11</sup> are rigidly fixed on a common axle C<sup>1</sup>. This construction may be applied to wheels with rims divided into any number of segments.

Suppose that a vehicle provided with a pair of wheels arranged as shown in Fig. 5 is rolling over soft, muddy or sandy ground, the wheel R<sup>1</sup>, resting on the ground by means of the rim segment 1<sup>1</sup> tends to cut a furrow from which it afterwards cannot be removed. When however the wheel R<sup>1</sup>, continuing its rotation, presents the space between the segments 1<sup>1</sup>—3<sup>1</sup> to the ground; the coupled wheel R<sup>11</sup> at the same moment comes in contact with the ground at a point where the surface has not been disturbed, with the edge E of the segment 2<sup>1</sup>, and continuing to turn disengages the wheel R<sup>1</sup>, while the vehicle continues to move, being supported by the segment 2<sup>1</sup>.

If the last mentioned segment sticks fast, it is in its turn disengaged by the 80 segment 3<sup>1</sup> of the wheel R<sup>1</sup>, and so on.

The rim segments may be of larger or smaller size according to the degree of softness of the ground to be traversed, and they may be provided with projections or gripping teeth. The arrangement of the peripheral segments may also be such that one segment can enter into

[Price 1/-]

[This Drawing is a reproduction of the Original on a reduced scale.]

